## REMARKS

Claims 1-2 and 18 have been amended. No new matter has been added.

### Double Patenting Rejection

Claims 1-18 have been rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U. S. Patent No. 6,730,227 in view of Patent 5,171,450.

Applicants obviate this basis of rejection by filing a terminal rejection which is attached hereto.

### Rejection under 35 U.S.C. §103(a)

Claims 1,2 and 6-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Hoots et al. U.S. Patent No. 5,435,969 ('969 patent) in view of Hoots et al. U.S. Patent No. 5,171,450 ('450 patent).

Applicants respectfully traverse the Examiner's rejection.

The '450 patent describes a method of monitoring and dosage control of tagged polymers in cooling water systems. In particular, a fluorescent monitor is tagged to a polymer so that the polymer can be monitored in the cooling water system. An inert tracer may be added in proportion to said tagged polymer as well.

The '969 patent describes a method of monitoring a water treatment agent to an industrial water system via the use of a concentration indicator that is formed by a combination of an incipient agent and a water treatment agent. An inert tracer may also be added in proportion to the water treatment agent. The '969 patent describes various industrial water systems to which this concentration indicator methodology may be applied. One industrial process system mentioned is a membrane filtration water system. The '969 patent does not specifically describe how this would be accomplished, but does mention how the monitoring of water treatment chemicals could be used as a diagnostic tool for membrane filtration systems.

Claim 1 is directed to a method for monitoring a membrane separation process comprising the steps of: (a) providing an industrial process, wherein within said industrial process there are feed streams comprising one or more solutes in an aqueous liquid; (b) providing a membrane capable of removing solutes from a feed stream by separating said feed stream into a first stream and a second stream, wherein said first steam is the permeate stream and said second stream is the concentrate stream; (c) selecting an inert fluorescent tracer and a tagged fluorescent agent; wherein the selection is made such that it is known in advance whether said inert fluorescent tracer and said tagged fluorescent agent are either (i) capable of traveling through the membrane into the permeate stream either separately or together, or (ii) not capable of passing through the membrane into the permeate stream either separately or together; (d) introducing the inert fluorescent tracer and tagged fluorescent agent into the feed stream; (e) providing one or more fluorometers, to enable the detection of the fluorescent signal of the inert fluorescent tracer in the feed stream and the concentrate and optionally the permeate and the detection of the fluorescent signal of the tagged fluorescent agent in the feed stream and the concentrate and optionally the permeate; (f) using the one or more fluorometers to detect the fluorescent signal of the inert fluorescent tracer in the feed stream and the concentrate and optionally the permeate and to detect the fluorescent signal of the tagged fluorescent agent in the feed stream and the concentrate and optionally the permeate; (g) converting the detected fluorescent signal of the inert fluorescent tracer into the concentration of the inert fluorescent tracer in the feed stream and the concentrate and optionally the permeate and converting the detected fluorescent signal of the tagged fluorescent agent into the concentration of the tagged fluorescent agent in the feed stream and the concentrate and optionally the permeate.

Claim 18 is directed to a method for detecting damage to a membrane used in a membrane separation process comprising the steps of: (a) providing an industrial process, wherein within said industrial process there are feed streams comprising one or more solutes in an aqueous liquid; (b) providing a membrane capable of removing solutes from a feed stream by separating said feed stream into a first stream and a second stream, wherein said first steam is the permeate stream and said second stream is the concentrate stream; (c) selecting an inert fluorescent tracer and a tagged fluorescent agent; wherein the selection is made such that it is known in advance that one or both of said inert fluorescent tracer and said tagged fluorescent agent are not capable of passing through the membrane into the permeate stream; (d) introducing the inert fluorescent tracer and tagged fluorescent agent into the feed stream; (e) providing one or more fluorometers, to enable the detection of the fluorescent signal of the inert fluorescent tracer in the feed stream and in the permeate stream and the detection of the fluorescent signal of the tagged fluorescent agent in the feed stream and in the permeate stream; (f) using the one or more fluorometers to detect the fluorescent signal of the inert fluorescent tracer in the feed stream and in the permeate stream and to detect the fluorescent signal of the tagged fluorescent agent in the feed stream and in the permeate stream; wherein, if one or both of the fluorescent signals of the inert fluorescent tracer and the tagged fluorescent agent are found in the permeate then this indicates the membrane is damaged in some way.

A prima facie case of obviousness requires that the prior art references teach or suggest all the claim limitations, and there must be some suggestion or motivation either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. MPEP 2142 citing *In re Vaeck*, 947 F.2d 488 (Fed. cir. 1991).

With respect to claim 1, neither reference teaches or suggests, alone or in combination, the elements of: (c) selecting an inert fluorescent tracer and a tagged fluorescent agent; wherein the selection is made such that it is known in advance whether said inert fluorescent tracer and said tagged fluorescent agent are either (i) capable of traveling through the membrane into the permeate stream either separately or together, or (ii) not capable of passing through the membrane into the permeate stream either separately or together; (d) introducing the inert fluorescent tracer and tagged fluorescent agent into the feed stream; (e) providing one or more fluorometers, to enable the detection of the fluorescent signal of the inert fluorescent tracer in the feed stream and the concentrate and optionally the permeate and the detection of the fluorescent signal of the tagged fluorescent agent in the feed stream and the concentrate and optionally the permeate; (f) using the one or more fluorometers to detect the fluorescent signal of the inert fluorescent tracer in the feed stream and the concentrate and optionally the permeate and to detect the fluorescent signal of the tagged fluorescent agent in the feed stream and the concentrate and optionally the permeate; (g) converting the detected fluorescent signal of the inert fluorescent tracer into the concentration of the inert fluorescent tracer in the feed stream and the concentrate and optionally the permeate and converting the detected fluorescent signal of the tagged fluorescent agent into the concentration of the tagged fluorescent agent in the feed stream and the concentrate and optionally the permeate. Therefore, a prima facie case of obviousness is rebutted.

With respect to claim 18, neither reference teaches or suggests, alone or in combination, the elements of: (c) selecting an inert fluorescent tracer and a tagged fluorescent agent; wherein the selection is made such that it is known in advance that one or both of said inert fluorescent tracer and said tagged fluorescent agent are not capable of passing through the membrane into the permeate stream; (d) introducing the inert fluorescent tracer and tagged fluorescent agent into the feed stream; (e) providing one or more fluorometers, to enable the detection of the fluorescent signal of the inert fluorescent tracer in the feed stream and in the permeate stream and the detection of the fluorescent signal of the tagged fluorescent agent in the feed stream and in the permeate stream; (f) using the one or more fluorometers to detect the fluorescent signal of the inert fluorescent tracer in the feed stream and in the permeate stream and to detect the fluorescent signal of the tagged fluorescent agent in the feed stream and in the permeate stream; wherein, if one or both of the fluorescent signals of the inert fluorescent tracer and the tagged fluorescent agent are found in the permeate then this indicates the membrane is damaged in some way. Therefore, a prima facie case of obviousness is rebutted.

Assuming arguendo, with respect to both claim 1 and claim 18, that all elements of the claimed invention are taught or suggested by the prior art, a person of ordinary skill in the art, possessed with the understandings and knowledge reflected in the prior art, and motivated by the general problem facing the inventor, would not have been led to make the combination recited in the claims. *See In re Khan*, 441 F.3 977, 988, (Fed. Cir. 2006). More specifically, one would not be motivated to combine the '969 reference that discusses the monitoring of a concentration indicator in a membrane filtration system with the '450 reference that discusses the monitoring of tagged polymers in a cooling system because the use of a concentration indicator for monitoring an industrial water system and the use of a tagged polymer are two very distinct approaches to monitoring an industrial water system. A tagged polymer can be added directly to an industrial water system and sent through the system and directly monitored while a concentration indicator can not be simply added to an industrial water system; a concentration indicator requires that a water treatment agent is added to the system and a sampling of the water treatment agent is taken and combined with an incipient reagent to form a concentration indicator, which is capable of being detected by fluorometric means. Therefore, one of ordinary skill in the art would not have been led to make the combination recited in the claims.

In view of the foregoing, Applicants request that the Examiner remove the rejections of claim 1 and claim 18, as well as claim 2 and claims 6-17, that depend upon an allowable base claim, claim 1, and allow all pending claims.

## CONCLUSION

In view of the foregoing amendment and remarks, Applicants respectfully request withdrawal of all rejections and respectfully assert that this application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully Submitted,

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